After the Spill: Environmental Justice and Disaster Relief in West Virginia

Research Thesis

Presented in partial fulfillment of the requirements for graduation *with research distinction* in Comparative Studies in the undergraduate colleges of The Ohio State University

By

Bethani Turley

The Ohio State University

December 2016

Project Advisor: Dr. Katherine Borland, Department of Comparative Studies

Table of Contents

Section 1. Introduction

"We're not advocating to kick out chemicals, we're advocating for safety," Maya said to a room full of students at Antioch College in Yellow Springs OH. She was describing her advocacy work after the 2014 Elk River Chemical Spill (also known as the "West Virginia Water Crisis") that affected residents of West Virginia. Maya's talk presented the history of chemical leaks, controversies, regulations and changes in the Chemical Valley of WV. Circling back to her experience of growing up in St Albans, a town in the Chemical Valley, Maya said, "I just share my experience; I don't want anyone in my community to go without food." The implication that people will suffer in basic everyday ways without employment in the chemical industry mediates the message of change. Like Maya, activists working in environmental justice do not claim that they want to take jobs away by shutting down industry, but instead say that they want to make industrial work safer for workers and fenceline communities that are at risk. I interviewed Maya and other residents of West Virginia who had experienced the chemical spill about how the spill affected their lives. Many of these narratives directly or indirectly call for environmental or social justice, but are also ambivalent or contradictory, seeking to negotiate a situation rather than eradicate it.

Environmental justice issues are typically considered to be sited problems of racial and economic inequality, affecting people in close proximity to waste or industrial zones and industrial workers. One definition is that environmental justice aims to make equal the "the unequal distribution of environmental benefits and environmental harms, tracing how race and class (and sometimes gender and sexuality) profoundly influence material, often place-based inequities" (Alaimo 2010, 28–29). This definition does not say that the aim is to remove all environmental harm, but just to make equal its distribution so that environmental harms do not

disproportionately affect groups marginalized by their race or class. Stacy Alaimo attributes the birth of environmental justice to the civil rights movement, citing the history of race-based environmental contamination (2010, 29; 1989, 71). The 2014 Elk River Chemical Spill subverted this idea of racial environmental injustice by affecting 300,000 people across nine counties. The contamination crossed urban and rural boundaries, moving beyond the typical "fenceline" communities located directly beside an industrial or waste site, and exposing the river's power to distribute the environmental harms of industry in the Chemical Valley.

A utopian vision of environmental justice in which harm is eradicated assumes that there is a singular victim, person to blame, or problem. Narratives of environmental justice are often ambivalent or contradictory because there are always layered and intersecting problems and attachments during disasters. This paper looks at environmental justice response narratives to two disasters in Kanawha County, West Virginia – the 2014 Chemical Spill and the 2016 floods. Certain groups are disproportionately affected by environmental problems, but environmental justice asks for the acknowledgement that everyone is responsible for and effected by environmental pollution. Individuals and communities narrate their relationships to polluting industries through response to industrial and environmental disasters, demonstrating how these relationships facilitate or prevent them from moving beyond their individual attachments towards collectivity in the context of threats to our environment and population.

In this paper I look at environmental justice narratives from the 2014 Chemical Spill and 2016 floods in West Virginia. In section two I explain that environmental justice narratives after the spill are often ambivalent or uncertain because of trauma from exposure, personal attachments, and the requirement that environmental justice address structural issues. In section three I look at disaster relief narratives after the 2016 floods. These narratives are more certain

because they do not address structural problems and work within a shorter timescale. The current rhetoric around disaster relief is resilience, which assumes the presence of the disaster, putting the onus of change on the individual.

Trajectory and Methods

I became interested in the chemical spill in 2014 when it happened. I followed the news, Krysta Bryson's videos and blog,[i] and I talked to my family about it. In May 2016 I started interviewing people about the spill. I realized early on that I could not just study the chemical spill. In late June 2016 West Virginia experienced widespread flooding, and I decided to volunteer as part of my research. During my research I would find out about other disasters that had happened recently or were ongoing. It caused me to think about the problem of defining the event: relief, multiple disasters, long term recovery, etc. How can I study two particular events when there are all of these intersecting events occurring? Using the chemical spill and the floods allowed me to compare the form of each disaster, and the respective disaster relief situation.

For the chemical spill I conducted a few short semi-structured interviews, and during the flood I spent a lot more time with one individual because I worked in one women's house. I also had many informal, off the record interviews and conversations that I attempted to capture using fieldnotes. To do research during the ongoing flood disaster, I used participant observation by volunteering, which I had not anticipated when I conceptualized studying the chemical spill. To volunteer for flood relief gave me a first hand look at the flood experience. Working with one individual for a longer period of time allowed for me to see the floods in a different way than if I had conducted only short interviews. However, volunteering was not all deep engagement and connection. While in general the flood survivors and other volunteers welcomed me and my

interviewing with open arms, some people that I met outside of the volunteering situation either cast serious doubt on my intention, or on the other end of the spectrum, praised me beyond what was merited. At the end of the summer, I interviewed various officials at Army Corps, WVU, and the Department of Environmental Protection. I chose to include these people because so much of the controversy around both disasters was linked to official management of resources and industrial regulation.

Section 2: The 2014 Chemical Spill // West Virginia Water Crisis

The Chemical Valley is a river valley in Kanawha county that is populated with numerous chemical manufacturing plants, a region whose "narrative ratifies progress" (Hufford 2002, 65). The chemical plants are located on the banks of the Kanawha River because the flood plain provided flat ground to build, in an area of unrelenting hills, near a dense deposit of salt. In the late nineteenth century, salt was an important culinary export and an essential ingredient in early chemical manufacture (Hufford et al. 2007, 51). In 1918 The US government built Nitro, WV over the course of one year [ii] in order to produce gunpowder (nitrocellulose) to supply the needs of WW1(Wintz 1985). The production of gunpowder in Nitro gave way to the production of chemicals. Although the chemical boom of the 1950s and 60s is over, the chemical industry continues to employ about 10,000 people in the state.

The chemical industry at large has a legacy of disastrous accidents, most notably the 1984 Union Carbide MIC leak in Bhopal India that killed upwards of 8,000 people. Industrial disasters are not just the big events we all know so well by name and place, like Love Canal, Hurricane Katrina, and Bhopal, India; they can also be smaller, slower, everyday occurrences.

"Slow violence" of chemical contamination is the harmful exposure that lacks the sudden timescale that characterizes a normative idea of violence (Nixon 2011). Sudden disasters can expose the slow violence of underlying, undetected contamination. The Chemical Valley in WV has long experienced chemical exposure and leaks of the slow and sudden kind. In the mid-1980's, a Monsanto Plant in Nitro, WV contaminated the Kanawha River by dumping dioxins into it. The region is also the only place in the US that stores MIC. MIC-related leaks occurred there in 1985, 1990, and 1993.[iii]

The slow threat of exposure became suddenly realized on January 9th 2014 when approximately 10,000 gallons of the chemical methyl-cyclohexanemethanol (MCHM) leaked into the Elk River out of a rusty storage tank located on its bank above downtown Charleston, WV. The leak entered the river just upstream of the drinking water intake, contaminating the water supply of 300,000 people across nine counties. MCHM is a chemical used to clean coal of heavy metal particulates before the coal is burned for energy. This chemical seeped into people's homes and produced a sickeningly sweet smell of black licorice. Many people reported health impacts from the spill (Schade et al. 2015; Whelton et al. 2015; Savoia et al. 2015).

Attachments to Industry

I interviewed four people who had experienced the spill: two environmental activists, a Charleston-based entrepreneur, and a woman from Clendenin. I am defining activist as a public figure speaking for a community who opposes government or industry action. There is a general spectrum of activists within the consultants I spoke to in WV, but not everyone would agree on using the term "activist" to describe themselves. Maya rejects the term "activist" because it is

used to discredit and marginalize the actor. Elise is an activist that accepts the term; she states that anyone can be an activist simply by *acting*. Lewis invokes a sustainable mission for his business by revamping the former salt industry into a business with low energy inputs. Alice is like an "advocate"; she acts on behalf of the groups that she sees marginalized or forgotten in the disaster relief process. Public figures were often the most accessible because they had motivations to speak to me. They are the well positioned "cultural brokers", people ready to explain their culture for outsiders (Noyes 2016b). These activists and advocates would narrate their attachments to work, industry, and family through their conceptions of environmental justice, inequality and the changing economy. These narratives show how attachments mediate solutions.

Elise is a self-identified activist from WV who has been very active in anti-mountaintop removal activism, and is now a lawyer in Hinton, WV. She worked for flood relief during Hurricane Katrina, and experienced the 2014 Elk River Chemical Spill. She first heard about mountaintop removal (MTR) at Virginia Tech, a school that has a long standing relationship with Kayford Mountain in West Virginia, the home of activist Larry Gibson that is an intact mountaintop completely surrounded by mountaintop removal. Elise uses her family story to position herself as someone who has knowledge about the lives of coal industry workers. She explained, "My dad's a boilermaker, my boyfriend's a boilermaker. I am a product of the coal industry, of coal fired power plants. I have coal miners in my family. I am a firm believer that it's a finite resource, its dirty, there are other alternatives and we will get to that point." The fact that she is a "product" of this industry does not mean she wishes to preserve coal mining. The logic here is that she knows the inner life of coal mining, and because of that she has the authority to speak against it.

I met with Maya at Antioch College to talk about the chemical spill. She is originally from the Kanawha Valley, and now works with a group called People Concerned about Chemical Safety (PCACS), which grew out of the group People Concerned about MIC that formed after the leak in Bhopal. Maya's turn toward activism grows out of her childhood experience of toxic exposure at home, coupled with the complicating fact that the chemical industry employed her father. She describes her memory of a chemical leak in her neighborhood in 1993, when she was in high school, during which she had to "shelter-in-place". Sheltering in place because of MIC traumatized Maya, but it was additionally problematic because the chemical industry employed her father. The industry that "puts food on her table," was also the industry that endangered her life. Similar to Elise's story there is a cyclical logic to the stories of familial and employee attachment to industry. The industry creates you, and threatens to destroy you.

The nostalgia of local and family history creates an attachment that prevents individuals from seeing industry as being in direct opposition to themselves. Nearly everyone I met had some connection to an extractive industry, folks that worked in timber, natural gas, and coal mining, and whose family worked in chemicals. Although my family has not historically worked in chemicals, we have family legends that circulate that say our family used to own all of the land in South Charleston, including Blaine Island. The story is that George Washington gave Fleming Cobb (my distant grandfather) the deed to South Charleston, who then divided the land up among his children. Someone in my family received Blaine Island (in the Kanawha River) and then sold it to Union Carbide. Even residents who are not presently tied to industry through work, are tied to industry through local history and family.

Lewis is an entrepreneur in Charleston who makes artisanal salt and is tied to industry in West Virginia through work and family inheritance. He is not an "activist", although his business is intentionally low-input, meaning the salt is produced with passive solar heating instead of electricity or gas. Although his method of producing salt is different than the method used in the 19th and 20th century salt industry, his company uses the heritage of the salt industry as part of their branding. Lewis told me that his family owns land in WV that is leased to coal companies. He had moved away for a while, but then moved back to take over the land leasing business, and to start a new family salt business.

The 2014 chemical spill occurred during his company's first year of production. He said the spill was "inconvenient and unfortunate" and that it would have been a problem if his company were a higher-producing business at the time. Lewis told me that there were more immediate issues in WV – specifically the decline of coal jobs, which affect every entrepreneur and business owner, because less money is coming into and moving around the state. In this conversation, Lewis is foregrounding the role of jobs and industry in WV, while stopping the conversation about the environmental injustice of the chemical spill. This is a strategy that extractive industries use, to "define themselves as the backbone of local and regional economies" (Bell and York 2010, 112). In the Kanawha Valley chemicals are the "backbone" of the region economically, but coal has a hold on the whole state. Lewis's point is that coal jobs affect everyone's economic future and that this creates a bind. The state has abundant natural resources – like water – which could provide an economic future. If the coal industry is needed to keep capital flowing into the state, then increased coal production would increase the pollution of water. This correlation is called the "treadmill of production" model, which "argues that

ecological destruction is intrinsic to capitalist modes of production" (Bell and York 2010, 113). The problem is that the perceived solution to getting away from coal often relies on coal.

Many conversations I had in West Virginia would quickly become conversations about jobs. There is a preoccupation in the state with *jobs* because many people have lost good paying work because technological improvements have reduced the number of employees industries need and lower prices of materials coming from overseas undercut local industries. Mountain top mining employs fewer people than underground mining used to, combined with the fact that the US is not exporting coal. Many people told me that work is just not there – that timber is not being cut, that coal is not being exported, and that the chemical plants have layoffs. I never asked anyone specifically about jobs or work but by asking about environmental contamination, they understood that jobs were part of the picture. This flagged the assumption that people know about environmental contamination when they work in extractive industries, meaning that the problem is not a lack of information. Instead, toxicity is a known part of the job and it is part of the bargain or contract that workers make when they accept a job. In this sense, the problem is not that workers need to be educated about toxicity, because they know that toxicity is part of these industries. In these stories, work and family mediate the solution to industrial toxicity.

Resource of Clean Water

The "monoeconomy" of coal and chemicals has its hold in the state, but not everyone subsists only within these industries (Billings 2016, 59). Tourism is becoming the most recent boom for the economy in parts of the state. Newly elected Governer Jim Justice, who was running at the time of my fieldwork, ran on a platform that he would bring coal back, and that he

would create 16,000 jobs in tourism.[iv] Tourism in West Virginia is usually built around pristine mountain landscapes and water recreation. The maintenance of coal production beside the development of tourism relies on the assumption that these spaces can remain separate. Elise's conception of WV's economic future also prioritizes tourism, saying:

> Well it's our only economy. If you then kill the water, then the gas is gone, nobody's going to come vacation here. Fayetteville's biggest economy is their rafting. Well there's an injection well that is leaking radioactive water into wolf creek, which is just above were the rafting is. Nobody's going to come to raft in Fayetteville if they think they're rafting in radioactive water. That is part of the balance, which economy is better? Which one is long term?

Elise can see the tenuous separation of these industrial and recreational spaces. Envisioning the economic future of WV is a popular topic, and it reveals a combination of personal values with an idea of what is possible and probable. Elise says that WV is "the water state" and that water is just pouring out of the hills in an endless supply. On the other hand, *clean* water is threatened. Elise describes how the natural gas industry is using up the clean water for natural gas extraction, because fracking requires the use of clean water in order to prevent unknown and unpredictable chemical mixing. Elise tells me that "they have used 17 billion gallons of clean water to frack. And they haven't paid a penny for it." She makes the point that if less than $.01 per gallon were paid to the WV government for this water, the state would have budget surplus.

Using water to frack violates Elise's vision of what clean water should be used for – personal use, drinking, or for shipping to western states. Her vision is that WV could use pipelines to sell clean water to states in the west that need it because of drought conditions. She asks, "How much will a gallon of water be worth? What would a pipeline of water be worth? What if we built a pipeline of water out of Pocahontas County and sent it out west, 17 billion

gallons of water, instead of using it frack and polluting it? 20 years from now they'll be like, damn we should have put a price on the water. That was where the money was." Elise is not alone is speculating about water as WV's next big export. I spoke to university hydrologist Nick who said that major landowners in the state are discussing exporting water because they realize that coal is gone, timber is done, and natural gas infrastructure is not there yet.

> There's very active conversations about WV selling water to the West. 2/3rds of the US is drying out, and that 2/3rds of the US that's drying out is also where much of our food comes from. So think of this paradigm: WV is becoming wetter under climate change, more intense storms, hence more water. What happens if we well water to hipsters in Denver. Hipsters in Denver are not gonna want to buy acid mine drainage or alkaline mine drainage, surface mines and deep mines… They're going to want to buy clean water. So in this really kind of weird paradigm shift, wouldn't it be fascinating if climate change pushed WV to manage its water resources as a commodity to now sell out west. Like appropriate watershed management.

Shipping water is presented as an economic solution that would also keep WV's water clean, but the industry would be structured much like natural gas, with the use of pipelines. One problem would be who owns the water that is being shipped? Water from rivers are owned by the public. It is likely that shipping water would not change income inequality that is based in private ownership of natural resources in the state. The models of tourism and pipelines present a paradigm in which the power of outsiders' money is enough to incentivize clean water where the needs of residents inside the state are not.

West Virginia is perceived as always having a cultural and economic lack, and the solution to this lack is progress. Mary Hufford calls these solutions "rational and romantic regionalisms"; regional stereotypes reproduced by media and discourse (Hufford 2002, 64). The rational and romantic regionalisms position some spaces as needing industrialization and development, and other spaces as needing preservation. These regionalisms link place, time, and people (Noyes 2016a, 410). Shipping water and promoting tourism relies on this paradigm of

rational and romantic regionalisms, although the idea that extraction would protect water disrupts the assumption that industry is always polluting. The challenge to this model is that it relies on the separation of industrial contaminated spaces from pristine places that clean water would come from. As a model of environmental justice, the paradigm of shipping water seeks to remediate one problem (contaminated water) but not other structural problems like resource extraction, income inequality, and absentee landownership in the state.

Urban and Rural Populations

I interviewed Elise and Lewis about the chemical spill on the same day in June 2016. Lewis explained to me that the thriving whitewater rafting and resort industry was proof that WV has the best water in the world. Elise said that WV has the best water because it is abundant and clean, but that industry has cut residents off from accessing clean, readily available water. Lewis's narrative suggests that rural parts of West Virginia are pristine; that rural populations have access to better nature than the city population. Elise's narrative is similar, but that industry has taken away this access to clean water. Mountain springs are everywhere in West Virginia so they would seem like a common sense solution to access water during the spill, but destruction from mining disrupts access to this otherwise available water. Elise told me that during the spill some people did turn to mountain springs, drinking chemical contaminated water that was potentially worse than MCHM. She explained to me that industry has compromised the safety and availability of those springs:

> After about a week we were like, why are 9 counties on one water source? Oh, because local springs and streams have been buried or wells have been blown apart or you know all of these issues have happened around the mining industry. They've already contaminated the local water sources so the state, instead of addressing the pollution, just kept building the pipes out.

By "building the pipes out" the local government, mining industry, and private water company American Water were decreasing the self-sufficiency of West Virginians, causing people to be reliant on one private source of water (American Water Company).[v] It has been studied that steep and complex topography presents challenges to the ability of the state to govern, but in Appalachia the difficult terrain is removed for the coal seam underneath, and valley fills complete the leveling of the landscape (Scott 2009; Noyes 2014). Industry clears a path for government and development. The modernization of WV through coal mining and municipal water has forced remote populations to rely on water coming from the capital city.

The message that city water was unsafe to drink was supposed to translate to all affected counties, but in this particular context, local knowledge of spring water could not be relied on for finding safe water. This reality conflicts with the romantic perception that rural West Virginians are able to be self-sufficient by living off of the land. The fact that rural populations were also on city water makes them *similar* to the urban population. These narratives demonstrate how the rural population is supposed to be different. Rural populations are supposed to be able to rely on local water sources and springs, but it is assumed as a given that urban populations would not have access to local water sources, or that they do not have the local knowledge about them.

Women, Water, and Uncertainty

Toxic exposure itself produces narratives of uncertainty because chemicals are usually invisible and a direct causation between chemical exposure and illness is not usually made (cite book). MCHM *was* visible, because of its strong smell. The state government responded to the spill slowly, creating confusion and mistrust among residents. Krysta Bryson, in her Ohio State

dissertation, explains how confusion, controversy, and distrust were created after the chemical spill:

> A few of the major government missteps that occurred in the weeks during and immediately following the crisis:1) allowing a gap of at least eight hours between when the leak occurred and the public was notified and a Do Not Use Order was issued; 2) lifting the Do Not Use Order for the general population and then recommending pregnant women not drink the water; 3) drawing contaminated water into water buffaloes for emergency distribution in the affected counties; 4) establishing a "safe" contamination for drinking (and none for inhalation), without providing any scientific rationale (as was later found, none existed); 5) telling the public that their use of tap water was at their own discretion and refusing to declare the water either safe or unsafe; 6) cancelling public schools, re-opening some schools, and then sending children back home the same day when students and employees became ill from chemical inhalation; 7) discovering a second chemical was involved in the spill and not reporting this to the public until twelve days after the spill; 8) admitting that the storage tanks at the chemical plant had not been inspected by the DEP since 1991 and that chemicals in above ground storage tanks are not subject to any government regulations; 9) providing residents with arbitrary and dangerous flushing instructions and then later changing those instructions; and 10) despite public outcry at a press conference, the governor refusing to provide any in-home water testing and then later, only a few days later, agreeing to fund a $750,000 testing and assessment project (2015, 343–44).

The officials in charge of disseminating knowledge about the chemical failed to communicate clearly, meaning the people affected by the spill did not know how to act in order to keep themselves safe. Students, activists and local people coordinated delivery of clean water, and made YouTube videos to make up for the lack of definitive information in the days after the spill. Krysta Bryson worked with a public health official to educate residents on how to flush their pipes safely.[vi] Contaminated water of the spill created a lot of anxiety around the health and futurity of West Virginians. Elise explains that from the stereotype of Appalachians as backwards or inbred, chemical exposure has been naturalized in Appalachian bodies:

> In recent years I talk a lot about the myth of the inbred hillbilly. We have this like, you know, were inbred, we're back woods because all these birth defects and stuff, well, when you start putting the science together and you realize that if you're exposed to coal chemicals you have a much higher instance of birth defects. Well now a days we have regulations that limit those but one hundred years ago there were no regulations, so the

> instances were much higher, there was much more exposure, so the birth defects would have been much more prevalent, and what better way to marginalize a community than to say – oh them they're inbred, don't look there, you know that's gross, don't look there, they inbreed. Well… you'd have to inbreed for generations to get that level of birth defects because we were immigrants, I mean we're a state of immigrants.

The representation of Appalachians as having birth defects can be seen in films like "Deliverance". Elise's story sets up a familiar story – coal mining caused birth defects which caused coal mining communities to be stigmatized – but she directly places the blame on industry for this perception, as a way to take the public gaze off of the biochemical effects of coal chemicals. Her distrust is not in science nor her neighbors, but directly on the power that industry has in directing our gaze and persuading public opinions. Citizens suffer because regulatory bodies do not make correlate industrial contamination and illness.

Environmental controversies arise over who and what can produce and count as a source of "valid and reliable knowledge" (Gunter and Kroll-Smith 2007, 106). The chemical that leaked into the river affected people's health in various ways. The regulatory organizations and industry's lack of knowledge about the chemical led to a lack of official causation. The EPA and Freedom Industries did not know what effects MCHM would have on health because no studies had been done. Government and industry officials assumed that if the chemical was harmful, a study would have been done on it. The idea that citizens "didn't know" but felt that there were effects did not translate into a government perception that the chemical was dangerous.

The government did tell pregnant women that they should continue to not drink the tap water. The perception that the chemical was dangerous to pregnant women would be widespread in the narratives about the spill, stemming from the government warnings but also the fact that many stories circulated about babies showing more severe effects from coming into contact with

the chemical. In her YouTube video "West Virginia Water Crisis: A Long History of Pollution in WV", Krysta Bryson talks about meeting a woman who had been washing her baby in the contaminated water after the MCHM spill. The woman said that her baby had severe eczema causing the baby's scalp to crack and bleed. The woman said that when she switched to washing her baby in bottled water, the skin cracking went away.

People Concerned about Chemical Safety and WV Free, a reproductive rights organization, teamed up to do "Women & Water listening sessions", where they anonymously interviewed community members about their experience during the spill. The report depicts a strong distrust and loss of trust with government and regulatory bodies, but also a large concern about reproductive and children's health (WV Free 2014). Women using motherhood as a form of activism are usually characterized as "emotional" or appealing to home, as opposed to being characterized as rational (Gunter and Kroll-Smith 2007, 122; Lemish 2000). Elise wasconcerned with reproduction and the chemical spill, both in general and with her own health. Her anxieties were expressed through a legend about biological change because of chemicals:

> Before the chemical leak, there were documented, an umbilical cord has three veins in the cord, a healthy one. And in Charleston and in the chemical valley they've been seeing live births with two vein umbilical cords. Which is an adaptation, a mutation, basically to say, we can't live here. We can't reproduce. It's the biology saying we're changing how we reproduce to make it less likely we can reproduce because the environment is toxic.

She noted that this story was anecdotal because it was not published research, but instead was told to her from nurses that do live births in the Chemical Valley. The idea that women's reproductive capabilities in Chemical Valley are changing to respond to chemical hazards presents the woman's body as most significantly marked by chemical exposure, not the baby's body. This conception is that women's bodies are permeable and are changing in response to

toxicity. Adaptation implies an active response, and mutation a more passive one, but either way in this story women's bodies are showing the agency to stop the likelihood of reproducing in a continually toxic place.

Stories of activism, economies, and women and children's bodies after the chemical spill present different types of concerns, injustices, and solutions to the problem of industrial toxicity. There is a cyclical and ambivalent nature to these narratives that suggests we are not moving forward on a timeline of progress. Being a product of the region can create conflicting feelings about realizing the harm of the industry. The persistent exposure to these industrial contaminants can affect future generations, even if the extractive industries are gone. In this sense, the idea that progress necessitates preservation goes beyond the preservation of picturesque sceneries to preservation of human life. Environment justice does not come in one form meant to fix one simple problem. Many people are relying on innovative industries to protect clean water in the future; this being the closest idea to a utopian future, a strong economic model within the state that relies on the protection of natural resources instead of their removal.

Elise talked about activist Larry Gibsons's view on the environment: "That was one of Larry's sayings, we all live downstream. You can contaminate the water upstream you know. The solution to pollution is dilution. Everybody says that. Push it out, push it out. But it ends up somewhere." She is comparing two viewpoints on pollution. One, that we are all on the receiving end of pollution, and the other that manages pollution by diluting and distributing it. The logic behind these slogans are not completely in opposition, but they approach the problem differently. These slogans mirror the logic behind many of the environmental justice narratives I heard after the spill, and provide an epithet to understand rhetorical frameworks for environmental justice and disaster relief.

Environmental justice narratives are ambivalent and uncertain because chemical exposure itself produces uncertainty. In this case, governmental response to the exposure reproduced this uncertainty by exposing a lack of official information. Although the immediate response to the spill produced some consensus about blame and responsibility, this consensus would give way to different ideas about the problem and solutions. Individual attachments to work, industry, and immediate issues of family mediates ideas about solutions and models of justice. Environmental justice attempt to construct the problem as something that effects everyone – "we all live downstream". However very often construction of the problem relies on narrating a problem that is specific to a particular population, or gender, race, class. Constructing a story that relates to all people is difficult because we narrate from within a world that is divided up into urban/rural, rich/poor, male/female, and one side of that binary is always more disadvantaged or susceptible to the harms of exposure.

Section 3: 2016 Floods

On June 23rd 2016, forty-four counties in West Virginia flooded, killing twenty-six people. The flooding was especially damaging in Northern Kanawha and Greenbrier County. Clendenin, a town about 20 miles north of Charleston along the Elk River, was one of the hardest hit towns. Rivers in West Virginia tend to flood because of complex hydrology, topography, and climatology – steep slopes, shallow soils, and converging weather systems. The most baseline cause of flooding are the mountains themselves, which contain small, steep streams that can fill up quickly when it rains. What this means is that *all* of Appalachia is flood prone, not just certain areas, but areas are affected differently based on rainfall, land cover change, and flood control

measures. For these reasons river banks and mountain hollers have been historically difficult places to live in Appalachia. When absentee landowners bought up the mountains, they pushed people to settle toward these river banks (Hufford 2007, 73).

The previous section looked at the narratives of environmental justice after the 2014 Elk River Chemical spill. This section will look at responses to the 2016 floods and other natural disasters in Kanawha County, West Virginia through stories from two flood survivors, a man living beside the Yeager Airport landslide, and two officials who work in flood research and prevention. Environmental justice and disaster relief have different goals, and work within different timescales and scope. Earlier I defined environmental justice as seeking the distribution of environmental harms and benefits. Disaser relief is about returning a situation to normal, and the dominant disaster relief rhetoric in the moment is resilience. If environmental justice is action targeted at a structural problem, resilience is a slogan-concept that assumes the cause is unchangeable, and that individuals must assume responsibility for individual recovery and growth in the face of a problem. Environmental justice narratives usually assert a group designated as victim and another as responsible, creating a framework to act against. Resilience narratives dilute victim and responsibility, and blur the line between the two. This section will compare disaster relief to environmental justice, and present a critique of disaster relief and resilience after the 2016 floods.

Attachment to Family and Place

A week after the floods occurred, I worked with Keeper of the Mountain, an anti-mountaintop removal activist group, to deliver food to volunteer relief workers in Clendenin and

Bomont, a town north of Clendenin in Clay County. Arriving in Clendenin after the floods, the smell and sight of mud was overwhelming. I worked in Alice's house ripping out floors, and getting to know her a little bit. Alice is a 66 year old woman who had lived in Clendenin most of her life. I told Alice that I was not sure I would be able to help her because I did not know how to do house demolition. She told me not to worry, there is always something I could do, like help clean the mud off of photos of her son. In the context of immediate disaster relief, I learned that the disaster event itself is not necessarily the biggest tragedy in a survivor's life, and attachments to family, place, and the physical home, all play a role in decision making.

After a disaster, people talk about their family as a resource, not a burden, in order to negotiate the stigma around their actions and experience (Bock and Horigan 2015). During a disaster it is expected that everyone should help themselves before helping others, which often does not happen because people do not want to leave family and pets behind. In Alice's case, what would have been a resource for her was now gone. She felt stigma because she was not able to rebuild as quickly as her neighbors. By the time I got to her house, her direct neighbor had already gutted and rebuilt their house and was enjoying A/C inside their home while we were working. Alice's son and husband had passed away, in 2012 and 2014 respectively, and she felt stigmatized for not being able to work like the volunteers could, and because she did not have men in her family to help her with anything.

One day when I was driving back to Charleston from Clendenin, I decided to drive down Keystone Dr, the road that leads to the Freedom Industries site of the chemical leak. Unexpectedly, the road dead ended into pile formed from a landslide that had slid under the Yeager airport in Charleston, covering the road, a few houses, and a stream. There I met Tony, who was protesting the ongoing nature of the event at his home. He had constructed a sign that

said “Ground Zero, Still Here, 16 Months”, and every month that the landslide remained uncleared he would update his sign. [vii] Meeting Tony reminded me that in West Virginia there are industrial disasters happening everywhere, at different scales, sometimes just affecting a few people in a holler. Tony was speaking out through the use of his sign. He told me that ever since the landslide many people were coming down his street every day. Some days he would see men in suits talking about the landslide, watching it being hauled away by dump trucks. Other days, people like me would drive down the road not knowing the road was closed off.

Alice and Tony’s motivations are not so much related to the industries their lives are connected to, but have to do with their individual experience of trauma and destruction, and the attacks on their home. Flood survivors are not stymied by ideological adherence to industry relations. Research perspective is that the flood occurred and was the disruption of daily life. For Alice, the most important disruptions in her life were when her son and husband passed away. The flood served more as a mechanism through which this other trauma would manifest and be explored. Alice’s personal loss quickly became the yardstick by which all other events were measured. When I asked about the chemical spill, she told me that at that time her husband was sick. When I asked about the loss of her house, she said it was already destroyed by losing the men in her life. These were the primary events, the flood being secondary. The flood was both my physical and narrative entry point into the inner life of this women I had just met.

Alice often introduced her perspective on the floods by comparing it to her son’s death. We were talking about the effect the flood had on people’s gardens in Clendenin:

> But he has a nice garden this year. I mean I think people are trying to get back to the basics. You know and I think they will more, too, even after this flood. You know there is always something good. It’s just like when I lost my son. And people say, you know, for a reason. And I say no way, I don’t even want to hear that. Yeah you know how you hear

> all that. It'll be okay, you don't never get through that. You don't never get over that. You just learn to live with the hurt, is all you do.

One interpretation is that Alice is saying that her neighborhood will recover from this flood, but she will not really ever recover from losing her son. Another interpretation is that she is drawing on the experience of losing her son, and saying that the neighborhood will remain changed forever like she has after her personal loss.

Tony and Alice both presented some ambivalence towards what had happened to them. Alice's ambivalence stemmed from the loss of her family before the flood. Tony's had a different form. He expressed to me that the airport had taken advantage of his family home (not his physical house, but the holler and other buildings owned by his family), but also that he liked having the holler to himself now that his pesky neighbors were mostly gone. He told me that the airport had made him an offer to buy his house, for more than he paid for it originally, but that he did not want to sell because he had put work into the house. He wanted compensation from the airport, but he did not want to leave.

Ambivalence also stems from class based assumptions about homeownership and mobility. Some people view a house as an investment, where the purpose is to gain equity and sell it for more money. Tony is expected to up and move, because the airport offered him more money than the house was worth, discounting his emotional connection to his family's holler. Alice is expected to repair her home but she feels ambivalent about this because she does not have men to help her repair the house or live there with her once it is completed. However, when FEMA provided funding for her to live in an apartment in Charleston while she rebuilt her home, her identification was with being a homeowner paired with fears of living in the inner city, this caused Alice to assert that she needed to use the money in a different way. She bought a camper

for her and her sister to live and parked it outside of her house. She told me she *owned* not *rented*. Her perspective towards the value of her house would shift in different contexts, but her identity as a person who owns their home and does not live in the inner city would remain constant. Deciding to rebuild or move after a flood does not really happen as an individual. Attachments to place, home, and family, as well as expectations from the community and government shape the way people act and make decisions after a disaster.

Disaster Relief and Environmental Justice

In order to better understand the hydrology and flood management of West Virginia, I met with a university hydrologist and an Army Corps engineer. University hydrologist Nick tells me about studying the relationship between coal mining and flooding in southern WV:

> Anecdotally people have said for years that surface mining increases floods… Starting in the 70s and through the 80s and 90s, surface mines got larger. Which meant they had to find places to put all that s[p]oil material, so they started using valley fills to store that material. So the activist side was of course mountaintop mining increases floods. And the industry side was like no, how could it increase floods, this is like an act of god. Both of those perspectives really weren't founded in data, or the scientific process, and I don't think the scientific process is the only way to come to answers, but when you have these polarized issues, the objective scientific process is a good way to bring information in to the conversation. So I started studying the impact of mountaintop mining on hydrology and in watersheds that I have studied. I've been really surprised to find that the flooding has not been increasing, in some cases it actually has been decreasing, because the valley fills offer more storage, for water to go… So now you're forcing water to interact with all this coal bearing geology and chemistry, so now we have water quality issues downstream of your valley fill. So as a society do we want poor water quality or really flashy watersheds that can flood you out?

The question is whether or not, despite long standing inequities between citizens of WV and their dominant industries, putting communities and industries on an equal level goes far enough to render unstable the power discrepancies that exist. In either scenario, of flash-flood

prone watersheds or contaminated water quality from valley fills, the planner's perspective is that people living in these hollers should move out. In this prescriptive solution, there is not much of a dialogue happening between these two perspectives. Decision making within the Army Corps, the federal institution tasked with flood control, moves even further away from the community based approach, and generally relies on a top-down, utilitarian approach that says small communities must adhere to what is best for the larger community, even at the detriment of their own home and community. Valuation of Army Corps programs are made strictly in economic terms, by how much money the dams have saved by preventing flood damage. By evaluating flood controls monetarily, the city centers naturally become the main target for prevention, because they contain the most expensive infrastructure to protect. Compare the cultural museum and gold-domed capital building in Charleston to a small collection of single-story homes along the river bank. Federal flood control may actually strengthen structural inequalities between urban areas and rural areas upstream of the dams.

Alice observed that the Elk River's banks in Clendenin were eroding, and that the government was not interested in helping Clendenin in the way she saw Charleston being helped. Her idea is that the government should be overseeing the Elk more closely, they should be dredging the bottom of the river, like they do in Charleston near the Women's and Children's Hospital. Her concern was corroborated in an interview I did with an Army Corps Engineer and an employee of the Department of Environmental Protection. In one interview I was told that basically the Army Corps works primarily to prevent problems in cities like Huntington and Charleston. Additionally, the Elk River is considered too difficult to get to, and to work on it would necessitate building of new roads. There becomes no clear mediation between these

perspectives, because cutting out new roads could actually worsen conditions of erosion, flooding, and landslide risk.

In many of my interviews about the chemical spill and the floods, a salient feature was critique of disaster relief. Maya, Elise, and Alice critiqued the dominant relief method while claiming that their own local, grassroots efforts were cheaper, more efficient, and more equitable. The normative perspectives on disaster relief is that there is a humanitarian crisis and the situation needs to be brought back to "normal" or the way it was before (Redfield 2005). After the 2016 floods, national relief groups like the National Guard, FEMA, and the Red Cross came in to WV to help, as well as many national and local church organized groups like Samaritans Purse and Mennonite Disaster Service. These groups come in to remediate the situation, and locals and neighbors donate labor and goods to the cause. Disaster relief efforts are sustained for a while, but news media and general attention to the situation wanes as time passes or when disasters arise elsewhere. It is assumed from the outside that disaster relief brings towns back to normal.

What is disruptive of this paradigm is that the disaster does not end for a long time, and may not ever end for some people who remain in limbo for years and never return to their home. As of November 2016 some people in Clendenin are living in RV campers hoping they can make it through the winter in them. The way these non-local relief groups work is that they are sent to populated or accessible areas. During the water crisis this meant setting up in Charleston, Cross Lanes, or otherurban and suburban areas. This approach leaves behind people that are not mobile enough to make it to the city, whether that is because of transportation, age, disability, or lack of information.

After the flood, Alice had become an "advocate" for people less able than herself. She saw that elder, non-mobile, and very remote people may not have access to the distribution centers and free goods that were being offered. Alice took notice to this and used Facebook as a tool to rally support and supplies for people who did not have access by putting people's names on lists and making requests for other people. Her deep concern was about "granny" up the hill who could not get to town to get supplies. She had to do a lot of work to get volunteering directed at her own home, and used those channels to make volunteers aware that less visible and less able people still needed help too. Alice was critical of free giveaways that privileged abled bodied people with cars. She compared the winners of giveaways to her current unfinished situation, saying that all those people probably have their homes fixed by now. In this example of disaster relief a structural problem exists in which the lesser-abled and disadvantaged population continues to have unequal access to materials they need. Alice is working towards a model of justice, not just short term relief. Similar structural problems with relief occurred after the chemical spill. Elise, drawing on experiences of Katrina and MTR activism, describes the gap that local understandings fill:

> We knew, because of our grassroots work in the mountaintop removal communities, where these back hollers were, where these people were up in these hollers. We leveraged that local network, and boom, we were getting water out in to those places. A week after the crisis, the Red Cross was setting up in Charleston, or in the population centers, they weren't getting back out into those places. Those people might not be well, they might not have a car, or afford to drive 60 miles one way to pick up water, so we were filing a gap there that was necessary, and after working after the hurricane in New Orleans and after experiencing the water crisis, local grassroots nonprofit disaster relief is absolutely infinitely more impactful. We did more with 40k dollars than the Red Cross did with 4 million. You know, because we knew where to take it. At one point the Governor's office called the water hub and said, where do we need to take the water?

The payoff for this story is that her group of lay and local experts became the official experts that the government came to rely on in order to help residents get water. The

"humanitarian" crisis of the chemical spill temporarily neutralized tensions felt between anti-MTR groups and the state government. After the spill, an example of a "therapeutic community", or a short-lived period of consensus and cooperation, appeared because of the emergence of a "pure" victimhood (Gunter and Kroll-Smith 2007, 127). Bryson comments on how this therapeutic community is formed, by saying "In the case of the water crisis, environmental melodrama created a clear and stark division in the Chemical Valley: the polluters and the public. This division is rarely observed because so many people are either employed by the coal or chemical industry or so entrenched in the pro-industry discourse they can't see their own oppression."(2015, 354). These communities are short-lived, giving way to problems that are less easy to find consensus on.

Similarly, flood relief groups could only go where they knew they were needed, and they concentrated in areas with a high density of destroyed homes. FEMA volunteers took charge to get flood victims into safety and temporary homes. In narratives these workers and their actions are constructed as other and as having a lack of understanding of what was important. Paulette, Alice's sister, describes FEMA after the flood:

> They sent people down here to help me. And I had pneumonia, I could hardly even talk. Sick. I was sicker than a dog. And I sat over on the porch in a chair while they brought stuff out. Well there was things I wanted to keep because my son is a collector of Star Wars, and he had a whole bedroom full of – you probably seen some of it over in that house – in crates… This one guy, he said: that place aint worth saving. It's destroyed. Everything in it is. There's no point taking it out. He said you're sick you need to go to a hotel, or something, and rest. He called an ambulance, oh my lord, he just took over. He called an ambulance to come down here and check me out. He was doing all this behind my back [laughs]. Trying to take care of me. And he said I've called and got you a room in Dunbar for two nights, you're going to a motel and rest. And you're going to stop at Elkview Baptist Church and get you some clothes. He made me. Best looking thing you ever seen in your *life*. He was from London. Good looking – but anyway. He stood there with his arms crossed while I – big and tall, big man – while I got clothes. Then he went into the room with me and Alice to make sure it was cool. He told us he said, you can lay on the bed and watch the *tele*. Cause he's from London! And he called and checked on

> me for three or four days. He called me. He probably took me like his mom or something, I don't know. He's the reason I didn't get that stuff out of there. He is the reason, he made me leave. There's stuff in there that I could have saved.

It is unclear just how upset Paulette is about not getting her stuff, but her story demonstrates the way that FEMA works as an authority over the disaster relief, often missing what is important to people's lives. She needed his help because she was sick, but she is now left feeling like she had her things taken away from her.

During the floods, survivors and volunteers noted that locals were better disaster relief workers. Local rescue abilities were being called upon at short notice because the floods were unexpected. A non-affiliated volunteer coordinator named Pam, who was always set up at Bill's Used Auto in Clendenin every morning by 7:30am, sent me to Alice's house. Local relief workers like Pam are survivors of the disaster themselves and are volunteering without any institutional support. They are "vernacular responders", who are able to get around the "institutional traffic jam" (Ancelet, Gaudet, and Lindahl 2013). They do not have a bureaucracy to work within, but instead they work on what Alice called "common sense". In Clendenin, a town with an aging population, local rescue abilities were called upon to help out members of the community that were known to be unable to help themselves. This included pets, which were often in dangerous situations because there was no time to prepare for evacuation, and many pet owners were away from home. Able men in the neighborhood, who owned boats (Clendenin is on the river after all) would use what they had to get people to safe spaces. Paulette described:

> She tell you about the guys going in boats getting people? They were going around getting all the older people in the bottom – older than us – and bringing them to the church… Yeah a local guy that lived up the road, and uh, he was going and getting the people, putting them in the boat and bringing them to the church. This woman was crying because her dog was in the house, and he went over there and got her dogs out of the house and it had water in it. The house had water in it already, but he went over and got

> them dogs for her. And people was tying their dogs up. Like on this bank up through, to get it out of the flood. They went off they had to get out of here and the water got up around their dogs. And then the guys was having to go save the dogs. These guys was drinking beer – that was in the boat. *Half tanked*. They was having the best time they ever had in their life! It was something to do you know and they was helping. They was happy. It was crazy. It was a nightmare.

Not all of the local rescue stories were "positive" because saving pets was not a universal goal during the floods. Dogs were not allowed inside the church in Reamer, and so Paulette had to keep her dogs in her car for days before she found a church that would allow them inside. She felt like she was at the mercy of these local decision makers, not being able to choose whether her dogs could coming inside or not. She said, "If you hit an animal or something you go to jail. But they won't let them stay with you, what are you supposed to do, kill them? Just throw them out?"

These highly effective and efficient (although not always perfect) grassroots organizations are also extremely fragile. Speaking more about the floods than the chemical spill, most of these efforts centered around the energy of a single person, who may or may not work themselves beyond what is healthy in order to keep up with the need. When that person must stop, there is no one to take their place. I observed that there was a need for more locals to do this work in order that it does not all fall on one individual to maintain the effort. To utilize this local knowledge and ability, local organizations could be funded by larger groups like FEMA and Red Cross, but as they grow these groups would run the risk of changing from a small efficient group to a slow bureaucratic group. Despite this, people within this system claim that grassroots local organizations work better because they already have crucial local knowledge of topography, and because they bypass slow bureaucratic approvals.

Resilience

People hung flyers that read "#WVSTRONG" all over the town of White Sulphur Springs in Greenbrier County, home of the famous Greenbrier Hotel that is also the training camp for the New Orleans Saints football team. This hashtag, constantly present, demonstrated expectation that West Virginia communities would exhibit resilience in rebuilding after the flood. #WVSTRONG served as a rhetorical motivator, a "slogan-concept", that suggested to survivors that they should exhibit their inherent strength of spirit and community by rebuilding, while obscuring the factors that would make that task difficult (Noyes 2016a, 413–15). The expectation that West Virginians be strong takes the problem of disaster as a given, putting the onus on residents to respond in a way that is acceptable to the community. Moving away without gutting and rebuilding one's house would be a response to the flooding that would violate this expectation.

"Creative destruction" is the companion to resilience, meaning that when something is cleared away, something new can emerge (Noyes 2016a, 417). I met with a tourism and real estate developer in the Charleston area, who wrote in the Charleston Gazette proposing that residents of river communities turn this flood into an opportunity to develop their rivers for kayaking.[viii] Within this vision, the flood provides two services; with their homes now destroyed people can move away from the dangerous flood zone,with the river banks now open tourism for kayaking can be developed bringing sustainable economies to struggling towns. I did not see this plan being enacted in Clendenin or White Sulphur Springs. Although this plan resembles the idea of removal-turned-enterprise that was seen in post-Katrina New Orleans, the writer of the article was encouraging that communities themselves take over as the role of developer for their own benefit. The aging population of towns like Clendenin may hinder the implementation of

economic development like kayaking services that rely on the physical abilities of younger people.

Community responsibility for themselves has become a common narrative. Distrust of the government is expressed through critique of federal programs like FEMA and Army Corps, through ignoring safety warnings during the chemical spill and the flood, and through WV's federal and state election of non-politician, business-owning, candidates. Noyes argues that the resilience slogan-concept has indicated a new paradigm in which the façade of a greater social structure that takes responsibility for its citizens is disappearing, saying:

> In other words, we are on our own – and the creek is gonna rise. All of a sudden they are telling it like it is, and this is a change worth remarking. The public idiom of resilience evinces a loss of societal confidence in the modern progress narrative. Its rise indexes the decline of institutional willingness to assume responsibility for the collective wellbeing. We might call it abdication. (2016a, 420).

Alice and Elise specifically remarked in the distrust they held toward their government. Alice told me that based on her experiences with the flood, and her son's experiences in the military, that "this country is not ready for anything, not a war, not anything". Elise remarked similarly that from her experiences with FEMA she knew that "the government was inept and not equipped for disaster".

Disaster relief generally has a clearly defined goal: to return to normal, and the rhetoric of resilience is what motivates residents to action (Rose 2007, 384). Local activists claim to be more successful at disaster relief because of specific local knowledge about communities and topography. Local activists are willing to try to look at a complete picture of the problem, as opposed to official groups whose knowledge is incomplete, and are unwilling to see the whole problem (Gunter and Kroll-Smith 2007). Local activist relief workers attempt to bring disaster

relief and environmental justice together by addressing physical concerns of disaster relief with an awareness of structural issues. Environmental justice needs to work within intersectional problems meaning solutions are often ambivalent, contradictory, or not widely agreed upon. Environmental justice activism and disaster relief are both responses to disasters but they work on different goals, assumptions, and timescales.

Understanding Response and Attachment

Fatalism is a common and often problematic explanation as to why Appalachian communities do not move or change after a disaster happens. This explanation says that Appalachians are distrustful in governmental organizations, and that they feel a loss or lack of control, coupled with the responsibility to be "resilient". Nick describes the fatalism he sees, saying that he has encountered a particular community outlook after a flood that says:

> I'm not going to move from this hollow that 7 generations of my family have lived. I don't care if it floods more, were just going to rebuild. And it's out of our control. So let's just become more resistant to change and dig our heels in deeper. So that makes our mountain communities more vulnerable to an uncertain future. Whether that uncertain future is because of climate change or change in industry or whatever.

Residents are made vulnerable by staying in flood-prone and industrial zones, but are also made "resilient" by maintaining intact support systems via families and local communities. Resilience expects that people will capitalize on their destruction, despite facing emotional, psychological, and physical trauma.

Facts produced by scientists are not always received as "true". Nick sees this as "facts" vs "values", where decision making based on values can be problematic. He told me, "that's what

can be really challenging, because we should be making decision based on facts but we're humans. What that means is that we can tell someone, you really shouldn't swim in this river because of water quality issues, and they say well my family's been swimming in this river for three generations, and we're all fine." This decision making is based on values and a continuous knowledge and experience of place and environment. How would displacement or change affect these models of decision making?

After the 2016 floods, one community in White Sulphur Springs decided to move instead of rebuild in the same spot. With the help of Mennonite Disaster Service, a project called Mountain Hope was implemented in which a new community would be built on top of a hill instead of the floodplain. In this model, the environment would change but in theory the social connections would stay the same. Bryson sees this problem as one of access to history and information, saying, "people who know the history and recognize their own oppression are more likely to act than those who are not." (2015, 349). I have argued that information about toxicity and disaster is not what is lacking, but instead we need to problematize the easy expectation of "action". Facing problems of industry, climate change, and natural disaster, we all have relationships to threatening industries and places that are difficult to leave behind because they create the lifestyles we are accustomed to. Although in West Virginia the problem is particularly salient in people's relationships to polluting industry, the same problems are faced in every region of the country.

Works Cited

Alaimo, Stacy. 2010. “Eros and X-Rays: Bodies, Class, and ‘ Environmental Justice .’” In *Bodily Natures*. Vol. 86. Bloomington: Indiana University Press.

Ancelet, Barry Jean, Marcia Gaudet, and Carl Lindahl. 2013. “Introduction.” In *Second Line Rescue: Improvised Responses to Katrina and Rita*, xv–xviii. Jackson: University of Mississippi.

Bell, Shannon Elizabeth, and Richard York. 2010. “Shannon Bell and Richard York For Their Publication Community Economic Identity : The Coal Industry and Ideology Construction in West Virginia.” *Rural Sociology* 75 (1): 111–45.

Billings, Dwight B. 2016. “Rethinking Class Beyond Colonialism.” *Journal of Appalachian Studies* 22 (1): 57–64.

Bock, Sheila, and Kate Parker Horigan. 2015. “‘Invoking the Relative’: A New Perspective on Family Lore in Stigmatized Communities.” In *Diagnosing Folklore: Perspectives on Disability, Health, and Trauma*. Jackson: University of Mississippi.

Bryson, Krista Lynn. 2015. “A Regional Rhetoric for Advocacy in Appalachia.” The Ohio State University.

Gunter, Valerie, and Steve Kroll-Smith. 2007. *Volatile Places: A Sociology of Communities and Environmental Controversies*. Pine Forge Press.

Hufford, Mary. 2002. “Interrupting the Monologue: Folklore, Ethnography, and Critical Regionalism.” *Journal of Appalachian Studies* 8 (Spring): 62–78.

———. 2007. *Ethnographic Overview and Assessment: New River Gorge National River and*

Gauly River National Recreation Area. Boston: Northeast Region Ethnography Program, National Park Service.

Hufford, Mary, Thomas Carroll, Rita Moonsammy, Linda Lee, Cynthia Byrd, and Dana Hercbergs. 2007. "Ethnographic Overview and Assessment: New River Gorge National River and Gauley River National Recreation Area."

Lemish, D. and Inbal Barzel. 2000. "Four Mothers: The Womb in the Public Sphere." *European Journal of Communication* 15 (2): 147–69. doi:10.1177/0267323100015002001.

Nixon, Rob. 2011. "Introduction." In *Slow Violence and the Environmentalism of the Poor*, 1–44. Cambridge: Harvard University Press.

Noyes, Dorothy. 2014. "Heritage, Legacy, Zombie: How to Bury the Undead Past." In *Cultural Heritage in Transit: Intangible Rights as Human Rights*, 86:58–86.

———. 2016a. "Compromised Concepts in Rising Waters: Making the Folk Resilient." In *Humble Theory: Folklore's Grasp on Social Life*.

———. 2016b. "Group." In *Humble Theory: Folklore's Grasp on Social Life*. Bloomington: Indiana University Press.

Redfield, Peter. 2005. "Doctors, Borders, and Life in Crisis." *Cultural Anthropology* 20 (3): 328–61.

Savoia, Elena, Michael A. Stoto, Rahul Gupta, Nasandra Wright, and Kasisomayajula Viswanath. 2015. "Public Response to the 2014 Chemical Spill in West Virginia: Knowledge, Opinions and Behaviours." *BMC Public Health* 15 (1): 790. doi:10.1186/s12889-015-2134-2.

Schade, Charles P., Nasandra Wright, Rahul Gupta, David A. Latif, Ayan Jha, and John Robinson. 2015. “Self-Reported Household Impacts of Large-Scale Chemical Contamination of the Public Water Supply, Charleston, West Virginia, USA.” *PLoS ONE* 10 (5): 1–15. doi:10.1371/journal.pone.0126744.

Scott, James C. 2009. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven: Yale University Press.

Whelton, Andrew J., LaKia McMillan, Matt Connell, Keven M. Kelley, Jeff P. Gill, Kevin D. White, Rahul Gupta, Rajarshi Dey, and Caroline Novy. 2015. “Residential Tap Water Contamination Following the Freedom Industries Chemical Spill: Perceptions, Water Quality, and Health Impacts.” *Environmental Science and Technology* 49 (2): 813–23. doi:10.1021/es5040969.

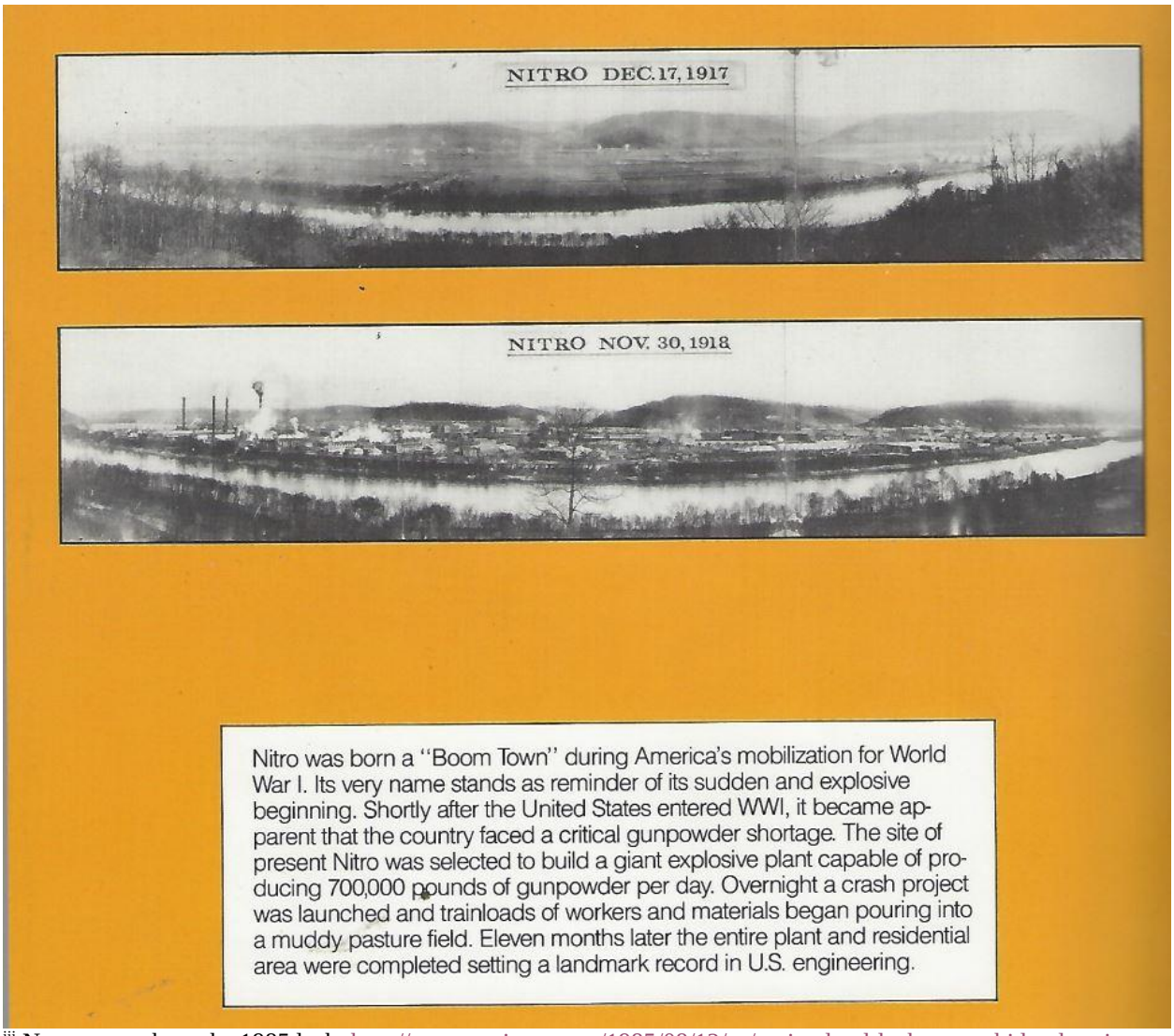
Wintz, William D. 1985. *Nitro, the World War 1 Boom Town: An Illustrated History of Nitro, West Virginia and the Land on Which It Stands*. Jalamap Publications.

WV Free. 2014. “Women and Water: Lessons from the Elk River Chemical Spill Listening Sessions.” http://www.wvfree.org/wp-content/uploads/2014/05/Women-and-Water-Report-final.pdf.

Zeff, Robbin Lee. 1989. “Not in My Backyard/Not in Anyone’s Backyard: A Folkloristic Examination of the American Grassroots Movement for Environmental Justice.” Indiana University.

[i] Krysta Bryson has a PhD from the English Department at Ohio State.

[ii] The back page of *Nitro, the World War 1 Boom Town: and Illustrated History of Nitro, West Virginia and the Land on which it Stands*:



[iii] News story about the 1985 leak: http://www.nytimes.com/1985/08/12/us/toxic-cloud-leaks-at-carbide-plant-in-west-virginia.html

[iv] Article about Jim Justice's promise of jobs in tourism: http://www.wvgazettemail.com/news-politics/20160814/justice-marketer-in-chief-pushes-tourism-but-big-projects-difficult

[v] History of WV American Water by student Gabe Schwartzman: http://wvwaterhistory.com/

[vi] Krysta Bryson's instructional video about MCHM flushing: https://www.youtube.com/watch?v=Rz3Y7rjnqEs

[vii] 

[viii] Article about developing kayak tourism after the floods: http://www.wvgazettemail.com/gazette-op-ed-commentaries/20160806/bill-currey-eyes-on-the-river-to-turn-these-towns-around